IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No. 7,165,041	)	Serial No. 09/322,073
	)	
Inventor(s): Michael F. GUHEEN *et al*	)	Filed: May 27, 1999
	)	
Issue Date: January 16, 2007	)	Attorney Docket No. 005222.00261

For: WEB-BASED ARCHITECTURE SALES TOOL

REQUEST FOR CERTIFICATE OF CORRECTION

U.S. Patent and Trademark Office
Customer Service Window
Randolph Building, Mail Stop: Certificate of Correction Branch
401 Dulany Street
Alexandria, VA 22314

Sir:

    Pursuant to 35 U.S.C. § 254 and 37 C.F.R. § 1.322, this is a request for the issuance of a Certificate of Correction in the above-identified patent. Two (2) copies of PTO Form 1050 are appended. The complete Certificate of Correction involves four (4) page.

    The mistakes identified in the appended Form occurred through no fault of the Applicant, as clearly disclosed by the records of the application, which matured into this patent. Enclosed for your convenience are the relevant portions of the Amendment filed March 3, 2003, the Notice of References Cited (PTO-892) sent with the Office Action of April 11, 2002, and the Specification as filed May 27, 1999.

    Issuance of the Certificate of Correction containing the corrections is respectfully requested. Since these changes are necessitated through no fault of the Applicants, no fee is believed to be associated with this request. Nonetheless, should the Patent and Trademark Office determine that a fee is required, please charge our Deposit Account No. 19-0733.

Respectfully submitted,

BANNER & WITCOFF, LTD.

Dated: _4-20-2007_

Banner & Witcoff, Ltd
1100 13th Street, N.W., Suite 1200
Washington, D.C. 20005-4051
(202) 824-3000

By: _Kenneth Smolik_
    Kenneth Smolik
    Registration No. 44,344

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.:	7,165,041
DATED:	January 16, 2007
INVENTOR(S):	Michael F. GUHEEN *et al*

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the cover page, References Cited section (56), U.S. Patent Documents:
Please insert the following references:

--6,249,769	06/2001	Ruffin et al
6,249,768	06/2001	Tulske, Jr. et al
5,958,012	09/1999	Battat et al
4,937,743	06/1990	Rassman et al--

On the cover page, References Cited section (56), Other Publications:
Please insert the following reference:
--Business Wire, "E-COMMS To Integrate Remote Management Capabilities With Computer Associates' Unicenter TNG; E-Commander Users To Benefit From The End-To-End Management Capabilities Of Unicenter TNG," 04 May 1998, Dialog file 20 #01538380.--

In Column 51, Line 50:
Please replace "HTIML" with --HTML--

In Column 78, Line 1:
Please replace "J)" with --f)--

In Column 88, Line 5:
Please replace "should i set" with --should I set--

In Column 89, Line 30:
Please replace "t)" with --f)--

In Column 97, Line 23:
Please replace "j)" with --f)--

Mailing Address of Sender:

Banner & Witcoff, Ltd.
11th Floor
1001 G Street, N.W.
Washington, DC 20001-4597

FORM PTO 1050 (Rev.2-93)

U.S. PAT. NO 7,165,041

No. of add'l copies
@ $0.50 per page

☐

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.: 7,165,041

DATED: January 16, 2007

INVENTOR(S): Michael F. GUHEEN *et al*

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Column 107, Line 4:
    Please insert: --However, some tools have problems with:--

In Column 111, Line 51:
    Please replace "j)" with --f)--

In Column 121, Line 23:
    Please replace "GOTO'S" with --GOTO's--

In Column 138, Line 23:
    Please replace "Event Data" with --Event/Data--

In Column 164, Line 30:
    Please replace "EBCOPY" with --IBCOPY--

In Column 166, Line 49:
    Please replace "CMP" with --CMIP--

In Column 217, Lines 29-39:
    Please replace listed paragraph with the following:
--The customer relationship management component of the present invention, in operation 2302, provides static content and applications to people with similar preferences and business needs. Dynamic content is provided, as are applications, to people with similar preferences and business needs.--

In Column 217, Line 56:
    Please replace "FIG. 23." with --FIG. 79.--

UNITED STATES PATENT AND TRADEMARK OFFICE

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DATED: January 16, 2007

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    Please replace "HTIML" with --HTML--

In Column 78, Line 1:
    Please replace "J)" with --f)--

In Column 88, Line 5:
    Please replace "should i set" with --should I set--

In Column 89, Line 30:
    Please replace "t)" with --f)--

In Column

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CERTIFICATE OF CORRECTION

PATENT NO.:   7,165,041

DATED: January 16, 2007

INVENTOR(S):   Michael F. GUHEEN *et al*

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Column 251, Line 28:
    Please insert: --Rights and Control Information--

In Column 267, Line 1:
    Please replace "Referring now to Fig. 94, steps" with --Steps--

Serial No. 09/322,073   PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	GUHEEN ET AL.	Examiner:	R. POND
Serial No.:	09/322,073	Group Art Unit:	3625
Filed:	MAY 27, 1999	Docket No.:	8567.108US01
Title:	WEB-BASED ARCHITECTURE SALES TOOL (AS AMENDED)		

AMENDMENT AND RESPONSE

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

In response to the Office Action mailed October 22, 2002, please amend the above identified application as follows. For the Examiner's convenience, Applicants note that this Amendment is arranged as follows:

In the Drawings

Please replace the drawings with the replacement drawings submitted herewith. Also submitted herewith are Proposed Drawings Changes and a copy of the original drawings with changes marked in red.

event, calendaring and registration services are further provided. For example, operation **2308** reminds the users of upcoming events, a calendar of events is maintained, and the users are permitted to register for the events.

Last paragraph of page 382-first paragraph of page 383:

One embodiment of the present invention is provided for utilizing all user indicia for the purpose of customizing a user interface. Note operation **2300** of Figure [23]<u>79</u>. In use, a user profile is developed in operation **2310** of Figure [23A]<u>80</u>. Such user indicia may include any of search requests, products purchased, products looked at but not purchased, products purchased and returned, reasons for returning products, customer stated profile including income level, education level, stated profession, etc. as well as preferences of the user. Figure [23B]<u>81</u> illustrates one method for developing a user profile. In operation **2320**, user information such as search requests, shopping events, and browsing habits may be collected by the system or by the user's computer for periodic download to the system. All of the user information would be placed in a database in operation **2321** for retrieval when necessary. Thus, a user's buying pattern for a particular type of item can be readily estimated with relative surety in operation **2322** each time a user uses the system. Further, the user's current activities can be logged and entered into the database in operation **2323**, thereby ensuring up to the minute accuracy. In operation **2311**, an item for purchase with a set of features is selected based on the user profile and is displayed. The item may be selected from a group of items having characteristics that corresponds to a predicted buying pattern of the user. The presentation of the set of features is customized based on the user profile in operation **2312**. For example, the features are The user is allowed to select the item for purchase. See operation <u>2313</u>[2314].

First paragraph of page 384:

The customer relationship management component of the present invention permits matching of web content and advertisements to specific user profiles. Note operation **2304** of Figure [23]<u>79</u>. Personalized recommendations are made based on the profile of a user. Cross- and up-selling of products to users based on their profiles is also permitted. Optionally, content matching rules are defined by configurable business rules. In the alternative, metadata and business rules match

content to profiles. Also optionally, legacy databases and information may be related to personal profile information.

Seventh full paragraph of page 385:

Referring to operations **2308, 2310,** and **2312** of [Figure 23] Figures **79 and 80,** the customer relationship management component of the present invention includes a calendar of events, a notification service, and a way to register for upcoming events. Relevant events are selected based on the profile of a user and the user is notified of the time and place of the event. Once the identity of a user has been verified, the registration of the user is accepted. A notice is sent to a user to remind the user of the event for which he or she has registered. The registration function is integrated with commerce functions to permit fee-based registration capabilities, such as permitting online registration via credit card.

First full paragraph of page 386:

One embodiment of the present invention, illustrated in Figure [14]65 as component **1408,** is provided for affording a combination of content management and publishing-related web application services. In use, referring to Figure [24]82, content of a data interface, i.e. a web-site, may be developed for accessing data on a network, i.e. the Internet, after which such content is managed in operation. Note operations **2400** and **2402,** respectively. Publishing of the content of the data interface is controlled by precluding transmission or publication of the content until approval in operation **2404.** The content of the data interface may also be tested in operation **2406.** For example, this may be accomplished by creating a staging and deployment environment in which the data interface is analyzed. Further features include "text-only" rendering and content workflow control.

First full paragraph of page 398:

The content management and publishing services component of the present invention also manages the content and security of the data interface. Note operation **2402** of Figure [24]82. Current files are stored along with past changes to documents, source code, and web content. User specific and project specific authorization is assigned to ensure secure administration. File

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/322,073	05/27/1999	MICHAEL F. GUHEEN	AND1P103	7477

7590   04/11/2002

MERCHANT & GOULD P.C.
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER
POND, ROBERT M

ART UNIT	PAPER NUMBER
2165	

DATE MAILED: 04/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		09/322,073	GUHEEN ET AL.
		Examiner	Art Unit
		Robert M. Pond	2165

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>27 December 2000</u> .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-17</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-17</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5,6,8</u> .   6) ☐ Other: .

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6249769	06-2001	Ruffin et al	705/7
	B	US-6249768	06-2001	Tulske, Jr. et al.	705/7
	C	US-5958012	09-1999	Battat et al.	709/224
	D	US-4,937,743	06-1990	Rassman et al.	705/8
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Business Wire, "E-COMMS To Integrate Remote Management Capabilities With Computer Associates' Unicenter TNG; E-Commander Users To Benefit From The End-To-End Management Capabilities Of Unicenter TNG," 04 May 1998, Dialog file 20 #01538380.
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. AND1P103

First Named Inventor:

GUHEEN, Michael F.

UTILITY PATENT APPLICATION TRANSMITTAL (37 CFR § 1.53(b))

Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

☐ Duplicate for
fee processing

Sir: This is a request for filing a patent application under 37 CFR § 1.53(b) in the name of inventor:
Michael F. Guheen, James D. Mitchell and James J. Barrese

For: **A SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR A WEB-BASED ARCHITECTURE SALES TOOL**

Application Elements:

☒ 518 Pages of Specification, Claims and Abstract

☒ 97 Sheets of Drawings

☐ ** Pages Combined Declaration and Power of Attorney

Accompanying Application Parts:

☐   Assignment and Assignment Recordation Cover Sheet (recording fee of **$40.00** enclosed)

☐   37 CFR 3.73(b) Statement by Assignee

☐   Information Disclosure Statement with Form PTO-1449

☐   Copies of IDS Citations

☐   Preliminary Amendment

☒   Return Receipt Postcard

☐   Small Entity Statement(s)

☒   Other: **NO FEES ENCLOSED**

- **Base package type** – identifies the various types of application components that are developed during systems building such as executables, JCL, HTML, scripts, and Java applets.

- **Package release type** – identifies the types of commonality that components can have. There are usually four basic types of components that are developed during systems building:

- **Technology architecture packages** – these packages are developed by the Technology Architecture team and are used by all other projects in a program

- **Program-wide packages** – these packages are developed by the Application Development teams but are used by other projects in the program. They are common components that are not owned by the Technology Architecture team

- **Application common packages** – these packages are developed by the Application Development team and are used internally on the project by application developers

- **Application packages** – these packages are the most rudimentary of all packages developed. They consist of basic application components developed by application developer

- **Package platform type** – identifies the eventual delivery platform of the package. Identifying this early on in development and encapsulating this information within the package definition, allows developers to envisage the production environment at an early stage during the systems development life cycle.

Given these three basic package definitions, a configuration management cube can be defined, which uniquely identifies version, change, and migration control characteristics of a given package. The cube can be used to implement a table-driven configuration management control system for all software developed on the program. The configuration control system consists of version and migration control. Therefore, the cube defines all processes associated with version control and migration of a package.

development to work from the same repository while allowing only one developer update access to a particular object at a time.

e) Are there existing tools that influence the selection of the Information Management tool?

Engagement teams have found that tools used in other parts of the client organization influence the selection of a repository tool. Clients may have experience and existing skills with certain Information Management tools that drive the decision to use those tools corporate-wide on other initiatives. The KX may also provide input to the tool selection process based on previous experience and skills of team members.

f) What are the other capabilities of the tool?

Engagement teams often chose a tool that can be used in other areas of the development environment. Many Engagement teams select data modeling tools that can double as Information Management tools. Using one tool for multiple purposes results in fewer integration points in the architecture and less time and cost training personnel on multiple tools.

g) Should the Information Management tool support multiple repositories?

As many repositories do not provide sufficient versioning functionality, it is common to have more than one repository on large projects. Typically there would be one repository for development, one for system test, and one for production. This improves overall control. Another reason could be that there is concurrent development of different releases, each requiring its own repository. Hence, on a large project, a tool that supports multiple repositories is often a requirement.

> *Does the Repository Management tool allow only authorized changes to be made to its contents by providing some form of access control?*

The repository contents are effectively the building blocks of the system and have broad reuse. A facility for security is required to prevent unauthorized changes to the repository elements and hence to ensure high quality and consistent repository content. For example, restrictions are often placed on making changes to data

b) Is there a large development team?

Version Control tools allow developers to work semi-independently and to choose the degree of integration they need at any given time. They can shield themselves from the tentative development performed on shared components and test a portion of the system with a stable environment around them. This prevents the development team from having to develop one full sequence at a time and increases the ability of a large number of people to work productively together, thus compressing the time required to develop a system.

c) Is there concurrent development of multiple versions of the system?

A comprehensive Version Control tool set is critical if there is concurrent development of multiple versions of the system. This is often the case when system development is to be sustained over an extended period.

Special provisions must be made to ensure that the library and repository structures are rich enough to be able to support the necessary versions. In this environment, a log of changes also becomes very important as fixes applied to earlier versions generally have to be applied to later versions as well.

d) Is it likely that the system will need to be rolled back to a previous version at some stage in the development?

This is typically the case when the project is breaking ground, using new techniques or untried architectures.

Version Control tools provide a means of taking snapshots of the system in time. If there are changes in the environment that force the system to be rolled back to a previous stage in the development, Version Control tools allow access to previous versions and mechanisms for reverting to an earlier version.

e) When should I set up version control?

Version Control should be set up from the beginning. By delaying version control, manual Version Control must be used. This result can be an increased cost in disk

c) Do changes need to be authorized by specific personnel?

Change control tools provide a vehicle for ensuring that only authorized changes are made and signed off. This ensures conceptual, proper ownership of the total look and feel of the application. Change requests may also be rejected or deferred by an authorized person.

d) Is coordination of changes required?

Facilities to track interdependencies between change requests (for example, change request A must be completed before change request B can start) are provided by Change Control tools. This can be used to encourage efficient scheduling and to ensure that work is not duplicated.

e) Should a record be kept of changes that fall beyond the capacity of the project at that time?

Change Control tools can provide a vehicle for capturing good ideas. If the project does not have the capacity to implement those ideas at present, the Change Control tool can be used to capture those ideas. These ideas can be reinvestigated when a future release is planned.

f) Are conflicting change requests likely to occur?

Change request tools can be used to identify changes that conflict, for example, one user wants a green background and another wants a blue background. The changes must be resolved through some kind of dialog or discussion and Change Control can be used to initiate this process.

g) Is it likely that the system will need to be rolled back to a certain state?

This is typically the case when the project is breaking ground by using new techniques or untried architectures.

Integration also aids in keeping track of the cycle where the problem occurred, the test condition, and therefore the business function affected by the problem.

e) How many design repositories should be used?

f) What does the design repository interact with?

Typically, the design repository represents the basis of the application development. It is mainly involved during the construction phase of the application and is used to centralize the application definition data. The design repository can be complex, providing impact analysis and application generation features.

In a testing environment, the design repository is a safe means of analyzing the impact of a problem on the whole application.

Having two separated systems, one for Problem Management and one for application design, duplicates the information and introduces errors. Therefore, the interaction between the design repository and the Problem Management, Test Planning, and Configuration Management components significantly increases productivity and reduces the risk of errors.

Product Considerations

a) Are there any Problem Management tools identified?

Problem Management tools log error information, generate error reports (such as System Investigation Reports or SIRs), classify problems, and record information on the source of the error. Problem Management tools are essential for the capture of stage containment metric information.

b) What engagement factors affect the use of Problem Management tools?

- *Risk rating of the engagement* - In general, management and planning tools help better address the engagement risks. A high risk rating for the engagement affects positively the decision to use tools such as Test Planning, Test Data Management, Problem Management, and Configuration Management.

- Class State Transition Diagram (1 per Class with complex state)

Guidelines for creating object models can be found in the <u>ODM MKB database</u>.

Tools such as MS Word, MS PowerPoint, ABC Flowchart (Micrografix), may be used to produce these deliverables. Specific modeling tools do exist, however, and provide advantages such as cross referencing (for example, are all the methods used in the Interaction diagrams described in the class definitions?), automatic propagation of changes to other diagrams, generation of reports, and generation of skeleton code. However, some tools have problems with:

- Usability and stability

- Single users or small numbers of concurrent users

- Proprietary repositories (usually file-based, rather than DB-based)

- Support of extensions / customizations

As well as providing the usual editing and graphical functionalities, a good modeling tool should:

- Interface with a repository (to support versioning)

- Support multiple users

- Generate code from the design

The use of UML notation to represent the object model is becoming more and more common. In this case other diagrams such as Use Cases (from Ivar Jacobson) and Collaborations Diagrams complement the model.

Component Modeling

Component modeling can mean either designing components from scratch, or customizing and integrating packaged software. No specific component modeling tools exist, and current object modeling tools only offer limited support for components (e.g. for packaging related classes together). Class packages can be used

e) Is reusability of prototype deliverables a requirement?

f) What is the objective of the prototype?

Depending on the objectives and timing of the prototype, all or part of the prototype deliverable can be reusable during later stages of the application development process. Some projects create prototypes in the very early stages of design to demonstrate the capability of the tool and obtain user acceptance, rather than gathering business requirements and documenting design based on the requirements.

If the objective of the prototype is to document designs based upon business requirements, then prototyping tools should be chosen with reuse in mind.

g) Is the prototype used to gather business requirements?

h) Is the prototype developed during Joint Application Design (JAD) sessions with users?

The prototyping tool should be easy to use so the application designer can quickly incorporate changes to the prototype.   User input should be incorporated as quickly as possible into the prototype and demonstrated back to the user. This helps to acquire user sign off on the application design and to gain acceptance of the application.

i) Does the prototyping tool support reuse?

Prototypes often represent a large investment, and in situations where a prototype is successful it should be possible to reuse the prototype in the remaining construction process.

Although prototyping tools may have the facility to provide reusable code for the system development, it is often available at the cost of having a slower prototyping tool. The reuse of code may not be a good idea since some of the design methods used for prototype development may not be suitable or desirable for application development.

development tool repository. Information that is not represented in the development tool repository cannot be loaded into the repository.

Restructuring

Restructuring tools are not analysis tools like the previous categories of reverse engineering tools, but design and construction tools. They enable the developer to rebuild a legacy system, rather than replace it. Examples of this type of process include restructuring spaghetti code with structured code, replacing GOTO's, streamlining the module calling structure, and identifying and eliminating dead code.

Data Name Rationalization

Data name rationalization tools extract information on variable usage and naming, and show relationships between variables. Based on these relationships and user input, these tools can then apply uniform naming standards throughout the system.

<u>Packaged Component Integration</u> (**132**)

Packaged components are generally third party components that provide ready-made business logic that is customizable and reusable. These can range from simple components offering limited functionality (for example, worksheet or charting GUI components), to components that handle a significant portion of the application architecture (for example, data access components and firewalls). The advantage of using such components is that they have already been coded, tested, optimized, and documented.

The fact that these components come from third-party software houses does not always guarantee their quality. In order to minimize the dependency of the final system on these components (thus reducing the impact of possible changes within the libraries), it is recommended that wrappers are written to enclose any third-party components. This way, if any changes are made to the internals of the components, only the wrappers would be affected, allowing the application and architecture code to remain unchanged.

- ensuring that incidents do not get lost as they are passed around support teams
- informing users when incidents have been resolved and ensuring resolution was complete.

In addition, Incident Management is responsible for ensuring that outstanding incidents are resolved in a timely manner. As part of Incident Management, incidents are reviewed, analyzed, tracked, escalated as necessary, and resolved.

Failure Control (1310)

Involves the detection and correction of faults within the system whether they be minor (e.g., workstation is down) or major (i.e., a disaster) has occurred.

Fault Management (**1312**)

When a negative event has been brought to the attention of the system, actions are undertaken within Fault Management to define, diagnose, and correct the fault. Although it may be possible to automate this process, human intervention may be required to perform at least some of these management tasks.

EVENT / DATA GENERATION (1314)

Event/data generation interacts with all the managed components in the execution and development environments in order to obtain the required management information. This component also interacts with the physical environment, managing hardware, and supporting infrastructure components of the operational architecture to obtain management information. It is important to consider these interfaces when choosing event/data generation components. Agents and proxies are two common types of event/data generation tools. Often these tools use broadcasting and trapping methods to capture information. Application generated events from vendor packages and user applications also fit into this component of the operational architecture.

Monitoring (1316)

SUPPORTING INFRASTRUCTURE (1350)

The supporting infrastructure is the subset of operating systems, utilities, languages, and protocols used to support the management of the system. The supporting infrastructure is most often determined by the execution and development environments and the business applications on the system. It is necessary to ensure that the other components of the operational architecture are compatible with the existing supporting infrastructure. This limits the number of possible tool set solutions. Examples of operating systems include HP-UX, AIX, Solaris, SCO, Novell NOS, MVS, OpenVMS, NT and DOS. Examples of support utilities include PS, GREP, IBCOPY, TAR, CPIO and clock correlation. Examples can be broken down according to their function within the OSI model. Session protocols include SNMP, CMIP, FTP, and RPC. Transport protocols include TCP and UDP. Network protocols include IP and IPX. Data-Link protocols include Token Ring, Ethernet, X.25, ATM, SONET, and Frame Relay.

Production Control (1352)

Ensures that production activities are performed and controlled as required and as intended.

File Transfer & Control

File Transfer and Control initiates and monitors files being transferred throughout the system as part of the business processing (e.g., nightly batch runs). File transfers may occur between any two or more devises within the system.

Implementation Considerations

What platforms will be involved in the file transfers?

The platforms will be determined by both the business and the technical requirements. This will impact the selection of the file transfer tools, and , in particular, how the file transfers are controlled from platform to platform.

receives, logs, classifies and presents event messages on a console(s) based on pre-established filters or thresholds.

Implementation Considerations

What type of events will be monitored? More specifically, what services need to be monitored across which devices (e.g., servers, workstations, routers, hubs, bridges)?

The scope of events to be monitored will have a major impact on the approach taken for Event management and the tools selected.

Where will devices reside on the network, and how frequently will they be polled?

The number of devices, their respective locations and polling requirements will significantly contribute to network bandwidth usage.

Where can event filtering be applied?

In order to reduce bandwidth, it is preferable that event filtering be performed locally to avoid sending all event information across the network, utilizing bandwidth and central processing capability unnecessarily.

What management protocols need to be supported?

The protocol requirements will impact the selection of the tool. For more information on management protocols, refer to the management protocols using SNMP and CMIP as examples.

What are some of the limitations that may be encountered?

The number of events generated in the system will increase due to the complexity of the system. Devices will generate events as well as applications, the technical infrastructure, etc. Common event handling mechanisms will be required to provide management information in a simple, consistent format and to forward important events on for management purposes. In addition, filtering capabilities may also be needed at remote locations to prevent the streaming of events to central / master management consoles.

The customer relationship management component of the present invention, in operation **2302**, provides static content and applications to people with similar preferences and business needs. Dynamic content is provided, as are applications, to people with similar preferences and business needs.

MATCH WEB CONTENT TO SPECIFIC USER PROFILES

- ☐ Permits cross- and up-sell of products to customers based on user profile
- ☐ Offers personalized recommendations based on an individual's profile
- ☐ Targets content and advertisements based on an individual's profile
- ☐ Relates legacy databases and information to personal profile information
- ☐ Content matching rules are defined by configurable business rules
- ☐ Uses metadata and business rules to match content to profiles

The customer relationship management component of the present invention permits matching of web content and advertisements to specific user profiles. Note operation **2304** of Figure **23**. Personalized recommendations are made based on the profile of a user. Cross- and up-selling of products to users based on their profiles is also permitted. Optionally, content matching rules are defined by configurable business rules. In the alternative, metadata and business rules match content to profiles. Also optionally, legacy databases and information may be related to personal profile information.

CUSTOMER FEEDBACK AND SURVEYS

- ☐ Automates creation and administration of online feedback forms
- ☐ Allows internal users to access results from web browsers
- ☐ Builds and maintains multiple feedback forms and surveys
- ☐ Delivers and automatically processes interactive online forms
- ☐ Displays and analyzes real time survey reports in text and graphic format
- ☐ Downloads collected information for offline needs

The customer relationship management component of the present invention also receives customer feedback and takes surveys in operation **2306**. Creation, administration, and maintenance of multiple online feedback forms and surveys is automated, as is delivery and processing of the forms and surveys. Internal users are

□ Lists literature for follow-up consulting
□ Provides referrals to match customer-entered needs (internal or third party)
□ Routes consulting leads to external systems

The web customer service component of the present invention lists literature for follow-up consulting. Further, referrals are provided to match user-entered needs, whether the referrals are internal or from a third party. Also, consulting leads are routed to external systems.

SECURITY SERVICES

As shown in component **1414** of Figure **14**, one embodiment of the present invention is provided for affording a combination of security-related services. Various features are included, such as permitting remote log in as well as restricting access to various resources to authorized users only. As an option, permission may need to be granted before certain activities are performed by a user or users.

Referring to Figure **27**, operation **2700** allows browser-based authentication with user verification data. In operation **2702**, access is granted to application and/or system data based on the user verification data, which may be stored in a user's browser. Virtual private networking is provided in operation **2704**.

Rights and Control Information

In general, the present invention can be used to protect the rights of parties who have:

(a) proprietary or confidentiality interests in electronic information. It can, for example, help ensure that information is used only in authorized ways;

(b) financial interests resulting from the use of electronically distributed information. It can help ensure that content providers will be paid for use of distributed information; and

(c) interests in electronic credit and electronic currency storage, communication, and/or use including electronic cash, banking, and purchasing.

at the functional level with call center systems via real-time API's may be provided. An adapter or mechanism to communicate and transfer data at the functional level with call center systems via batch API's may also be provided.

Preferably, API's for external integration are supported. Data Access Adapter capabilities may also be supported.

TRANSACTION INTEGRATION (FULFILLMENT/PAYMENT/3RD PARTY)

- ☐ Provides adapter or mechanism to transfer transactional information to a fulfillment house, payment processing center or other third party
- ☐ Provides reporting and logging functions to detect communication errors

The integration capabilities component of the present invention may provide an adapter or mechanism to transfer transactional information to a fulfillment house, payment processing center, or a third party. As an option, reporting and logging functions may be used to detect communication errors.

3RD PARTY INTEGRATION CAPABILITIES (CONTENT, TRAINING)

- ☐ Provides adapter or mechanism to communicate with external systems that provide additional content such as catalog information
- ☐ Provides reporting and logging functions to detect communication errors

The integration capabilities component of the present invention may also provide an adapter or mechanism to communicate with external systems that provide additional content such as catalog information. Again, reporting and logging functions may be used to detect communication errors.

MISCELLANEOUS SERVICES

As shown in component **1426** of Figure **14**, one embodiment of the present invention is provided for affording a combination of miscellaneous capabilities in a web architecture framework. Steps included are providing locator capabilities and streaming data over the network framework in operation **3300**. Further, searching